trying to focus Thompson '949 on the individually recited species of claims 5,7,9 etc., which basically appear to be novel with the authors/inventors

=> d l101 1-4 cbib abs hitstr hitrn

L101 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2003 ACS

2002:761994 Document No. 138:122338 Single molecule spectroscopy of tetrahedral oligophenylenevinylene molecules. Summers, Melissa A.; Robinson, Matthew R.; Bazan, Guillermo C.; Buratto, Steven K. (Department of Chemistry and Biochemistry, University of California, Santa Barbara, CA, 93106-9510, USA). Chemical Physics Letters, 364(5,6), 542-549 (English) 2002. CODEN: CHPLBC. ISSN: 0009-2614. Publisher: Elsevier Science B.V..

AB We probe the fluorescence from single mols. of a new class of tetrahedral oligo(phenylenevinylene) (OPV) mols. Our results show that the tetrahedral mols. contain multiple chromophores with limited inter-arm coupling, but significant mol. motion about the central carbon results in fluctuations in the polarizability axis of the mol. Loss in luminescence intensity is also obsd. during the fluctuations which is attributed to inter-arm coupling occurring when adjacent arms come close together. These fluctuations occur on the timescale of 100 ms to 10 s and are shown to be absent in the arm' mols. alone.

IT **372109-52-9 404935-53-1**
(single mol. spectroscopy of tetrahedral oligophenylenevinylene mols.)

RN 372109-52-9 HCAPLUS

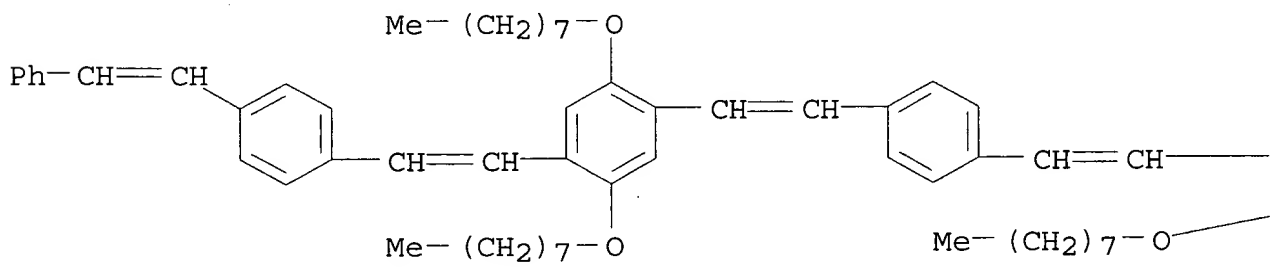
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-phenylethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

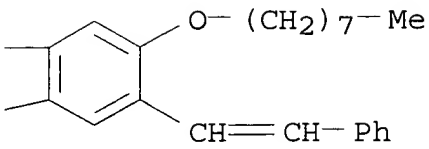
RN 404935-53-1 HCAPLUS

CN Benzene, 1-[2-[4-[2-[2,5-bis(octyloxy)-4-(2-phenylethenyl)phenyl]ethenyl]phenyl]ethenyl]-2,5-bis(octyloxy)-4-[2-[4-(2-phenylethenyl)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IT **372109-52-9 404935-53-1**
(single mol. spectroscopy of tetrahedral oligophenylenevinylene mols.)

L101 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2003 ACS
2002:73745 Document No. 136:269801 Coherent effects in energy transport in model dendritic structures investigated by ultrafast fluorescence anisotropy spectroscopy. Varnavski, Oleg P.; Ostrowski, Jacek C.; Sukhomlinova, Ludmila; Twieg, Robert J.; Bazan, Guillermo C.; Goodson, Theodore, III (Department of Chemistry, Wayne State University, Detroit, MI, 48202, USA). Journal of the American Chemical Society, 124(8), 1736-1743 (English) 2002. CODEN: JACSAT. ISSN: 0002-7863. Publisher: American Chemical Society.

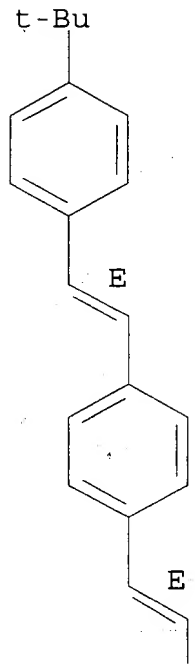
AB Measurements of ultrafast fluorescence anisotropy decay in model branched dendritic mols. of different symmetry are reported. These mols. contain the fundamental branching center units of larger dendrimer macromols. with either three (C3)- or four (Td, tetrahedral)-fold symmetry. The anisotropy for a tetrahedral system is found to decay on a subpicosecond time scale (880 fs). This decay can be qual. explained by Forster-type incoherent energy migration between chromophores. Alternatively, for a nitrogen-centered trimer system, the fluorescence anisotropy decay time (35 fs) is much shorter than that of the tetramers, and the decay cannot be attributed to an incoherent hopping mechanism. In this case, a coherent interchromophore energy transport mechanism should be considered. The mechanism of the ultrafast energy migration process in the branched systems is interpreted by use of a phenomenol. quantum mech. model, which examines the two extreme cases of incoherent and coherent interactions.

IT **288105-00-0P 372076-59-0P**
(coherent effects in interchromophore transfer of excitation energy in dendritic mols. studied by ultrafast fluorescence anisotropy decay)

RN 288105-00-0 HCAPLUS
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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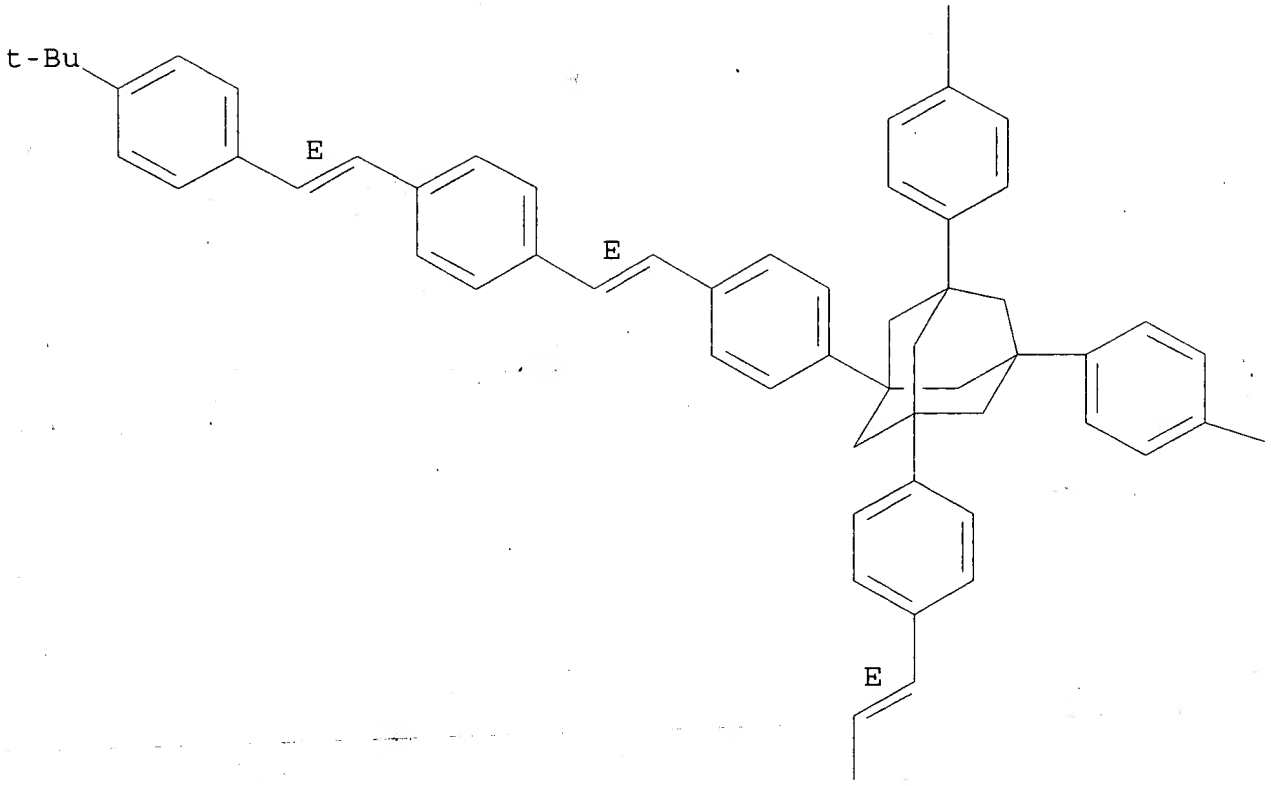

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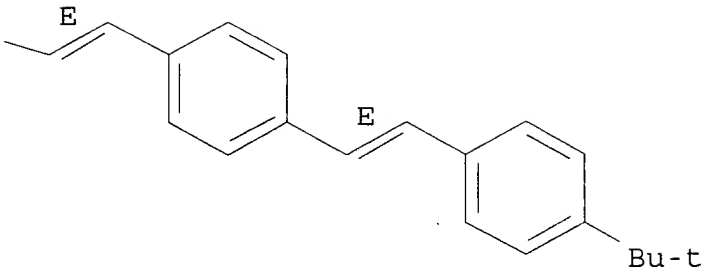

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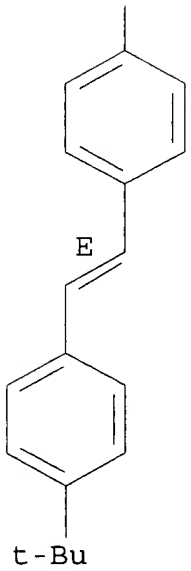
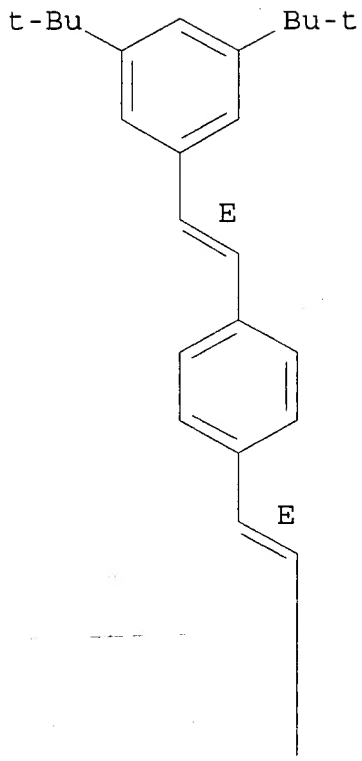
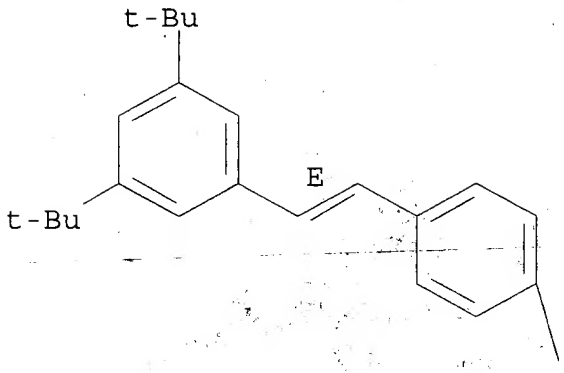


RN 372076-59-0 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A





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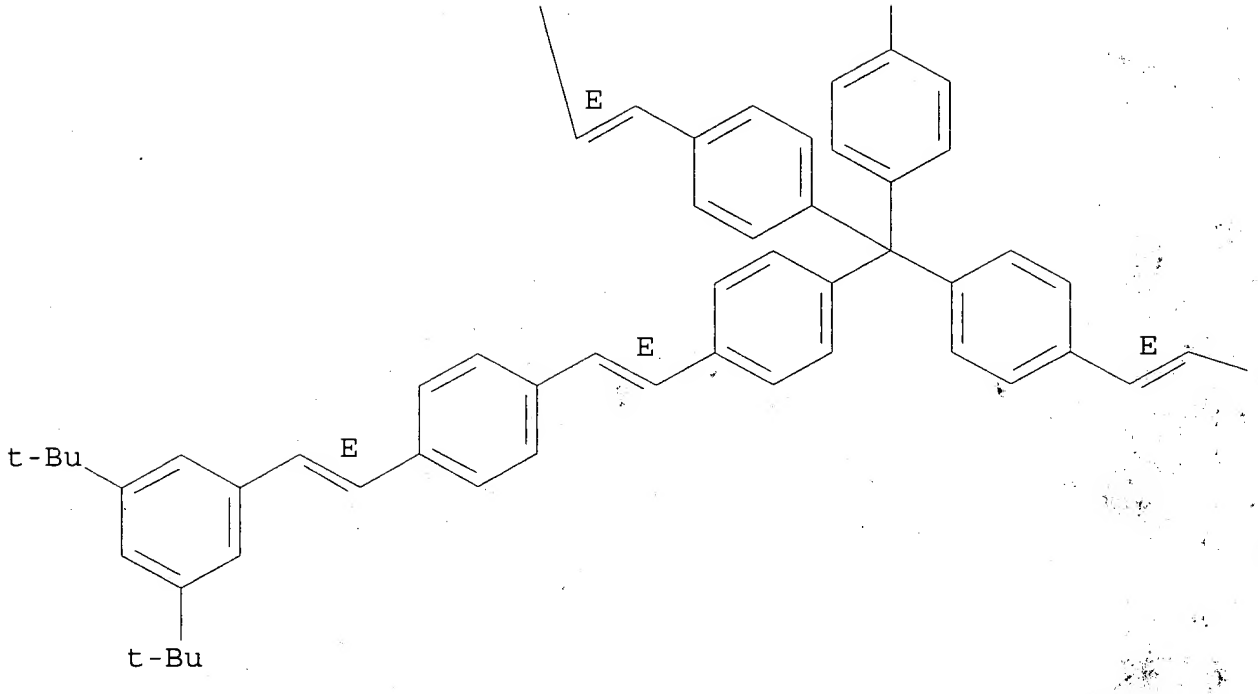

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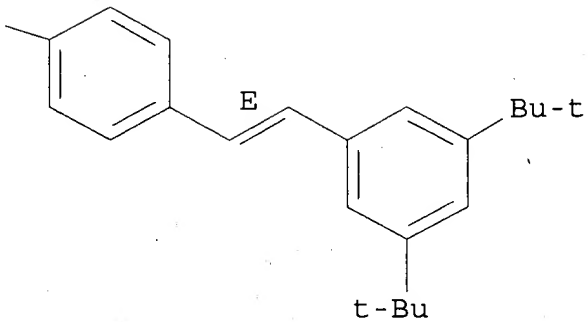


IT **288105-00-0P 372076-59-0P**

(coherent effects in interchromophore transfer of excitation energy in dendritic mols. studied by ultrafast fluorescence anisotropy decay)

L101 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2003 ACS
2001:92779 Document No. 134:334094 Exciplex formation with distyrylbenzene derivatives and N,N-dimethylaniline. Wang, S.; Bazan, G. C. (Departments of Chemistry and Materials, Center for Polymer and Organic Solids, University of California, Santa Barbara, CA, 93106, USA). Chemical Physics Letters, 333(6), 437-443 (English) 2001. CODEN: CHPLBC. ISSN: 0009-2614. Publisher: Elsevier Science B.V..

AB Exciplex formation between N,N-dimethylaniline and a series of distyrylbenzene derivs. with varying structures was studied by cyclic voltammetry and fluorescence spectroscopy. The frequency of exciplex emission obeys the Weller equation. Increasing the electron affinity of the acceptor red-shifts emission, with a concomitant decrease in fluorescence efficiency. Increasing the conjugation length of the acceptor decreases its excited state singlet energy more quickly than its electron affinity. As a result, exciplex formation is discouraged with increasing conjugation length.

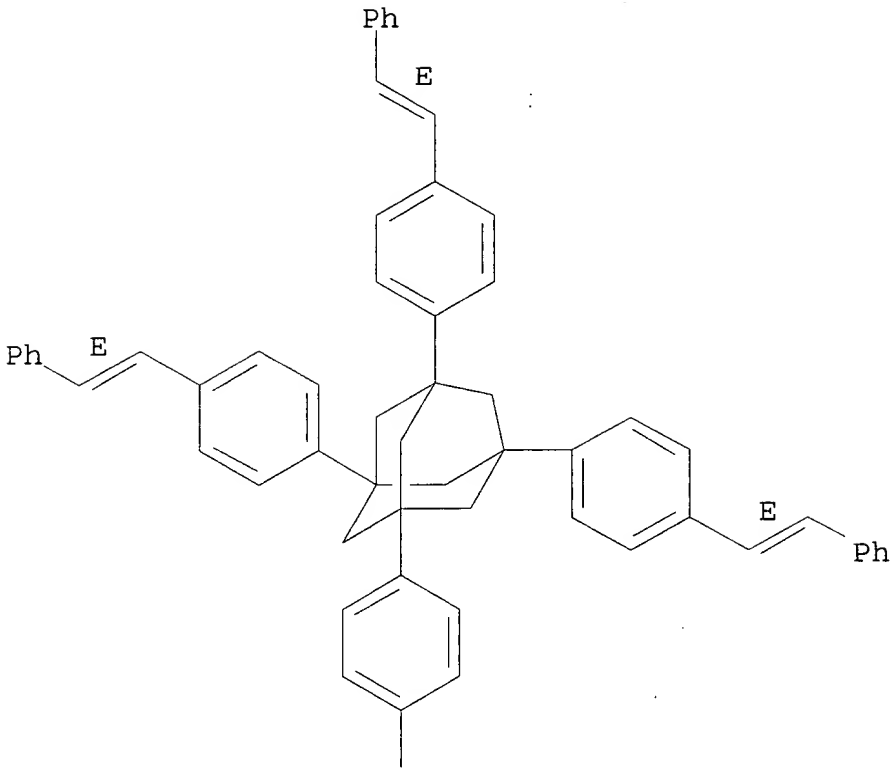
IT **288104-98-3 288104-99-4 336195-49-4**
(exciplex formation between dimethylaniline and distyrylbenzene derivs.)

RN 288104-98-3 HCAPLUS

CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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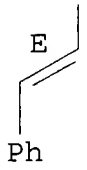
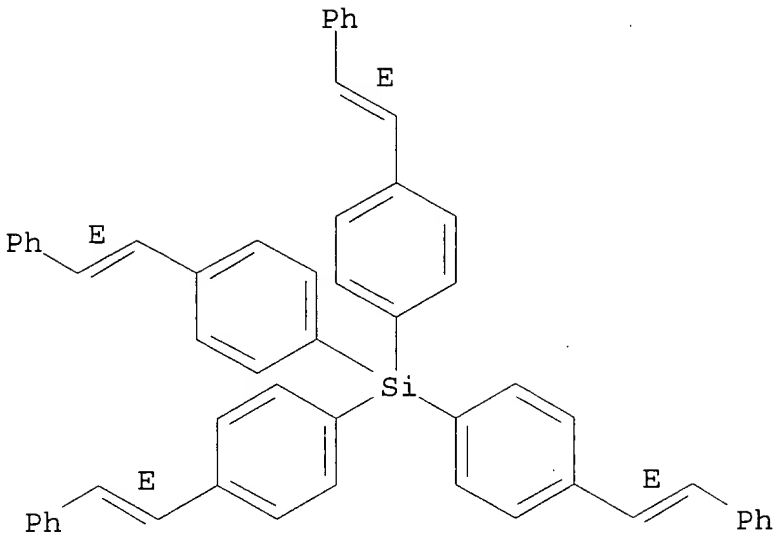


RN 288104-99-4 HCAPLUS
CN Silane, tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

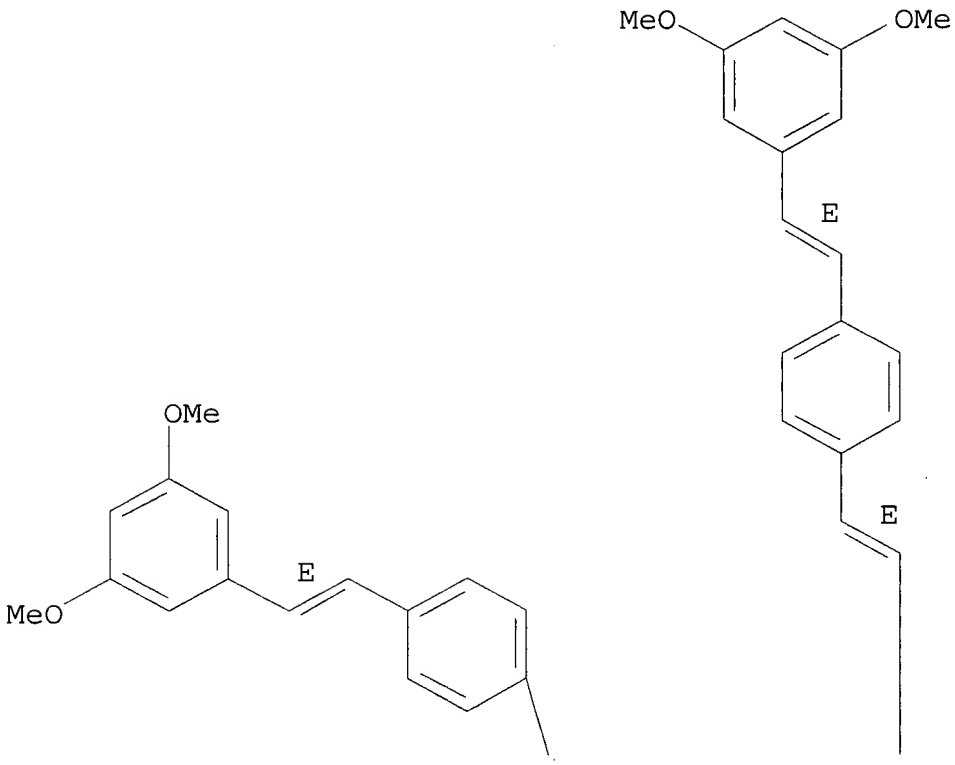
Double bond geometry as shown.



RN 336195-49-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-(3,5-dimethoxyphenyl)ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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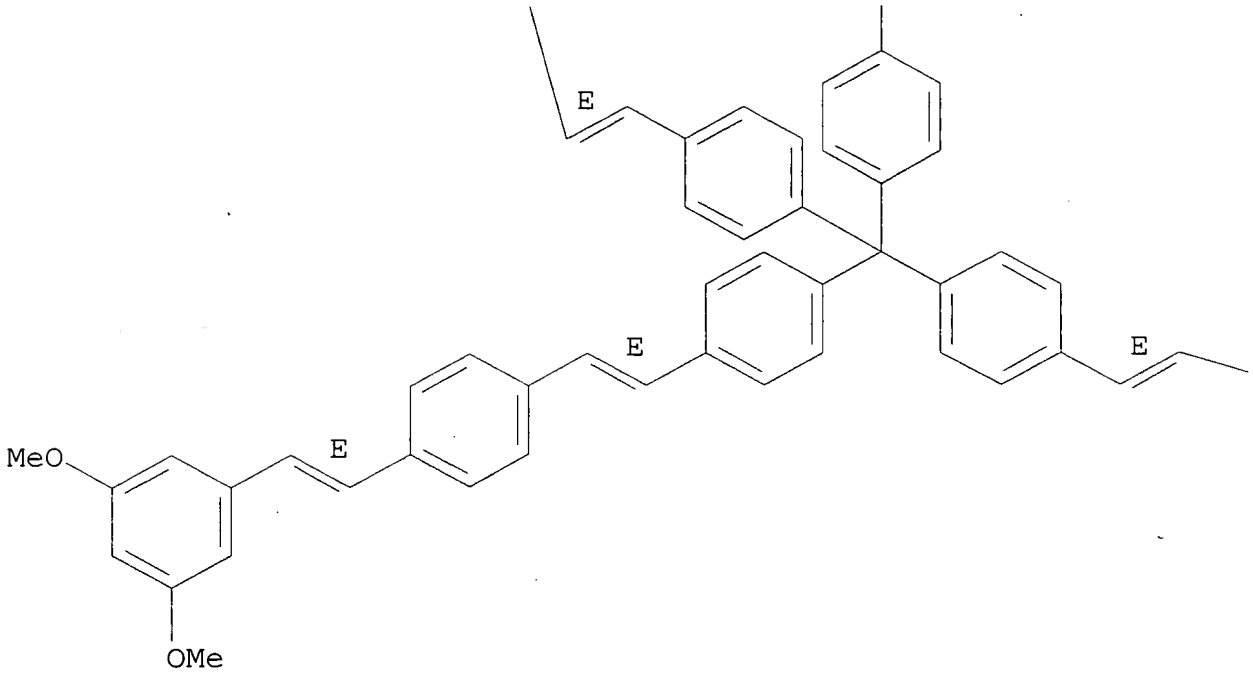

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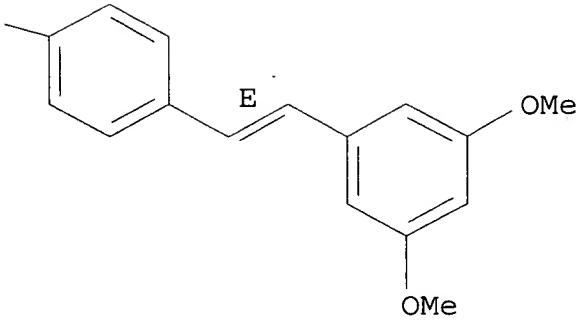


IT **288104-98-3 288104-99-4 336195-49-4**

(exciplex formation between dimethylaniline and distyrylbenzene derivs.)

L101 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2003 ACS
2000:372089 Document No. 133:163909 Synthesis, Morphology, and Optical Properties of Tetrahedral Oligo(phenylenevinylene) Materials. Wang, Shujun; Oldham, Warren J., Jr.; Hudack, Raymond A., Jr.; Bazan, Guillermo C. (Department of Chemistry, University of California, Santa Barbara, CA, 93106, USA). Journal of the American Chemical Society, 122(24), 5695-5709 (English) 2000. CODEN: JACSAT. ISSN: 0002-7863. OTHER SOURCES: CASREACT 133:163909. Publisher: American Chemical Society.

AB A novel topol. strategy is described for designing amorphous mol. solids suitable for optoelectronic applications. In this approach, chromophores are attached to a tetrahedral point of convergence. Stilbenoid units were covalently linked to tetraphenylmethane, tetraphenyladamantane, or tetraphenylsilane cores using palladium catalyzed coupling methodol. Thus, reaction of E(C6H5X)4 (E = C, adamantane, X = I; E = Si, X = Br) with styrene or 4,4'-tert.-butylvinylstilbene under Heck coupling conditions yields the corresponding tetrakis(stilbenyl) (E(STB)4) and tetrakis(4-tert.-butylstyrylstilbenyl) (E(tBuSSB)4) compds. Similarly, reaction of 1,1-diphenyl-2-(4-dihydroxyboronphenyl)ethene or 2-(4-pinacolatoboronphenyl)-3,3-diphenylacrylonitrile with tetrakis(4-bromophenyl)methane using Suzuki coupling methodol. gives tetrakis(4,4'-(2,2-diphenyl-vinyl)-1,1'-biphenyl)methane (C(DPVBi)4) or tetrakis(4,4'-(3,3-diphenylacrylonitrile)-1,1'-biphenyl)methane (C(DPAB)4), resp., in good yields. Compds. with more extended conjugation can also be prepd. Thus, reaction of excess 1-(4'-tert.-butylstyryl)-4-(4'-vinylstyryl)benzene with C(C6H4I)4 provides tetrakis(4-(4'-(4''-tert.-butylstyryl)styryl)stilbenyl)methane (C(4R-tBu)4) in low yield (.apprx.20%). The more sol. analog, tetrakis(4-(4'-(3'',5''-di-tert.-butylstyryl)styryl)stilbenyl)methane (C(4R-2tBu)4) is prepd. similarly using 1-(3',5'-di-tert.-butylstyryl)-4-(4'-vinylstyryl)benzene and in better yield (.apprx.80%). Alkoxy substituents can also be used to increase soly. Tetrakis((4-(2',5'-dioctyloxy-4'-styryl)styryl)stilbenyl)methane, C(4R-(OC8H17)2)4, was prepd. by treatment of C(C6H4I)4 with excess 2,5-dioctyloxy-1-styryl-4-(4'-vinylstyryl)benzene (yield .apprx. 73%). The simple stilbenyl derivs. were found by DSC measurements and powder diffraction expts. to be cryst. compds. Comparison of single-crystal X-ray diffraction data shows that C(STB)4 and Si(STB)4 form isomorphous crystals. The larger E(tBuSSB)4, C(DPVBi)4, and C(DPAB)4 compds. readily form amorphous glasses with elevated glass transition temps. (Tg = 142-190 .degree.C) in the absence of solvent. Extending the conjugation length of the arm leads to more stable glasses. For example, the glass transition temp. of C(4R-tBu)4 was measured at 230 .degree.C. Soln. phase optical spectroscopic data of E(tBuSSB)4 (E = C, adamantane, Si) are characteristic of the parent distyrylbenzene chromophore. Films, however, show broad and significantly red-shifted emission spectra. In contrast, C(DPVBi)4

gives absorption and emission spectra which are nearly identical between dil. soln. phase samples and neat solid films. The emission of C(DPAB)4 is broad and structureless, reminiscent of exciplex or excimer emission. Films of the tetramers with longer arms (C(4R-tBu)4, C(4R-2tBu)4, and C(4R-(OC8H17)2)4) show emission properties which are dependent on sample history. Annealing the sample at elevated temp. leads to red-shifted emission as a result of better interdigitation between the optically active fragments.

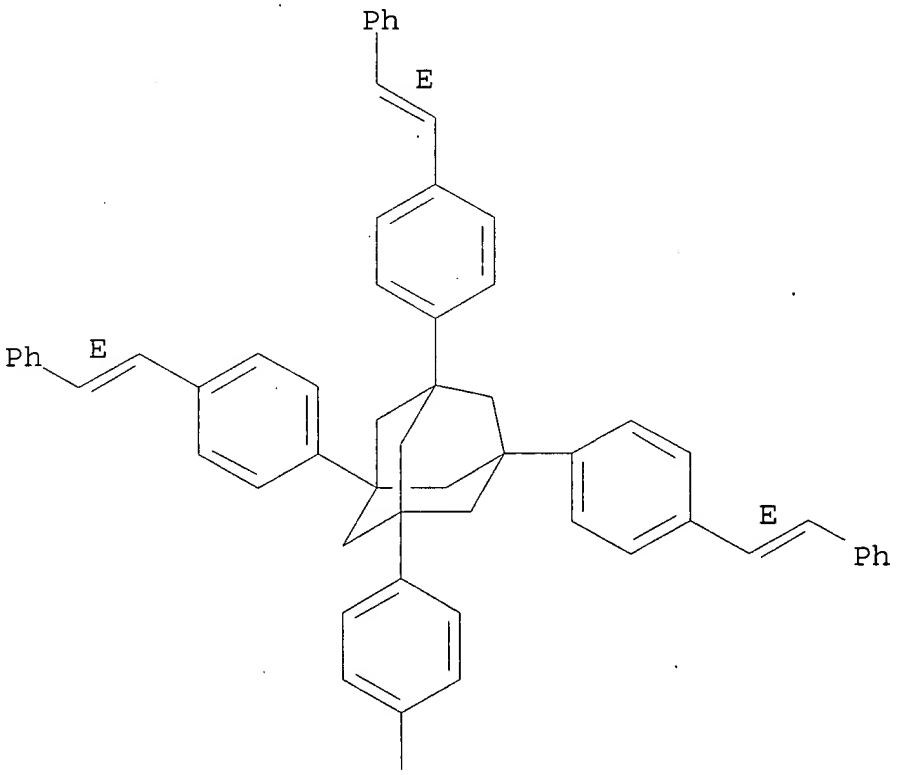
IT **288104-98-3P 288104-99-4P 288105-00-0P**
288105-01-1P 288105-05-5P 288105-08-8P
288105-10-2P 288105-12-4P 288105-15-7P
(prepn., morphol., and optical properties of tetrahedral oligo(phenylenevinylene) materials)

RN 288104-98-3 HCAPLUS

CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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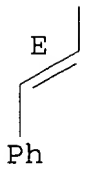
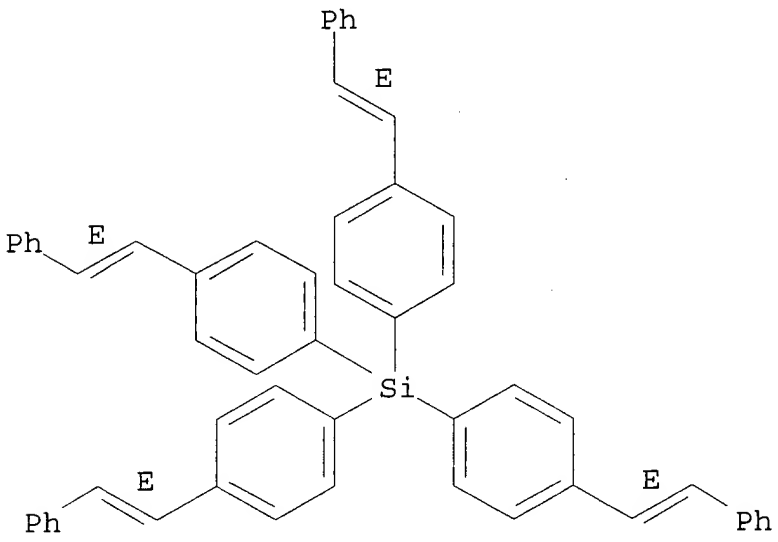


RN 288104-99-4 HCAPLUS
CN Silane, tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

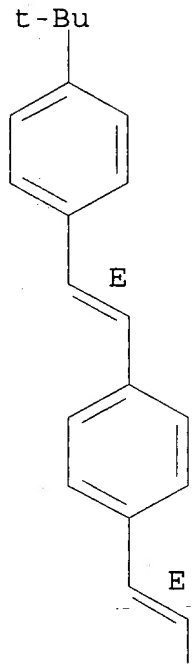
Double bond geometry as shown.



RN 288105-00-0 HCAPLUS
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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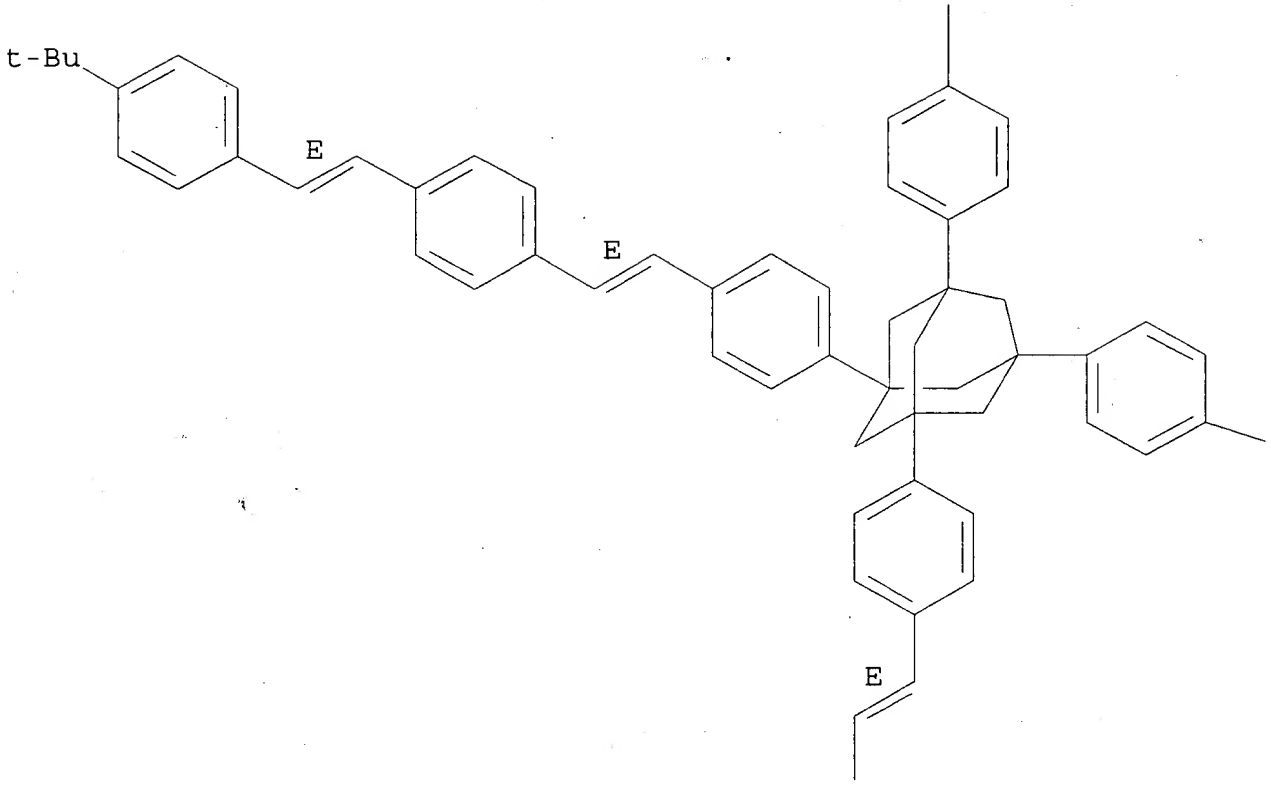

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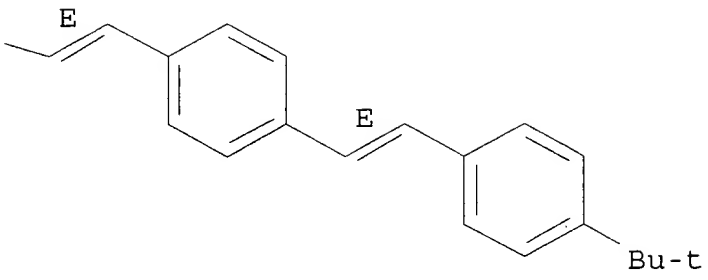

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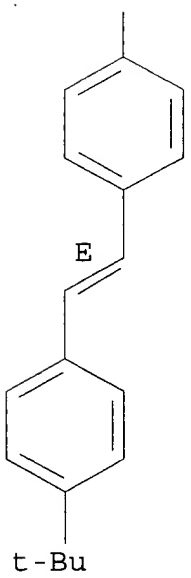
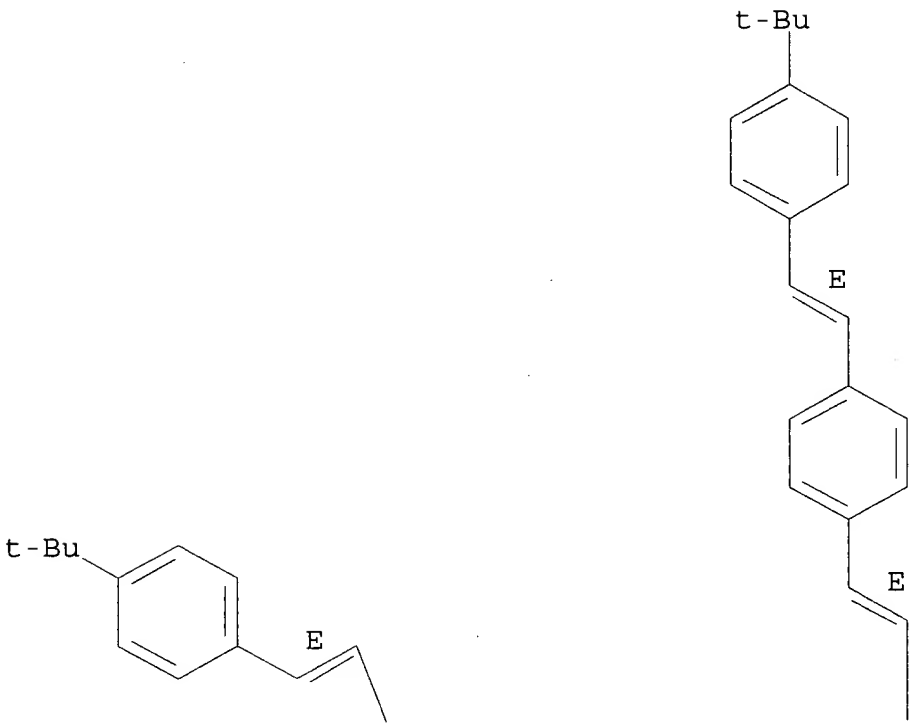


RN 288105-01-1 HCAPLUS
CN Silane, tetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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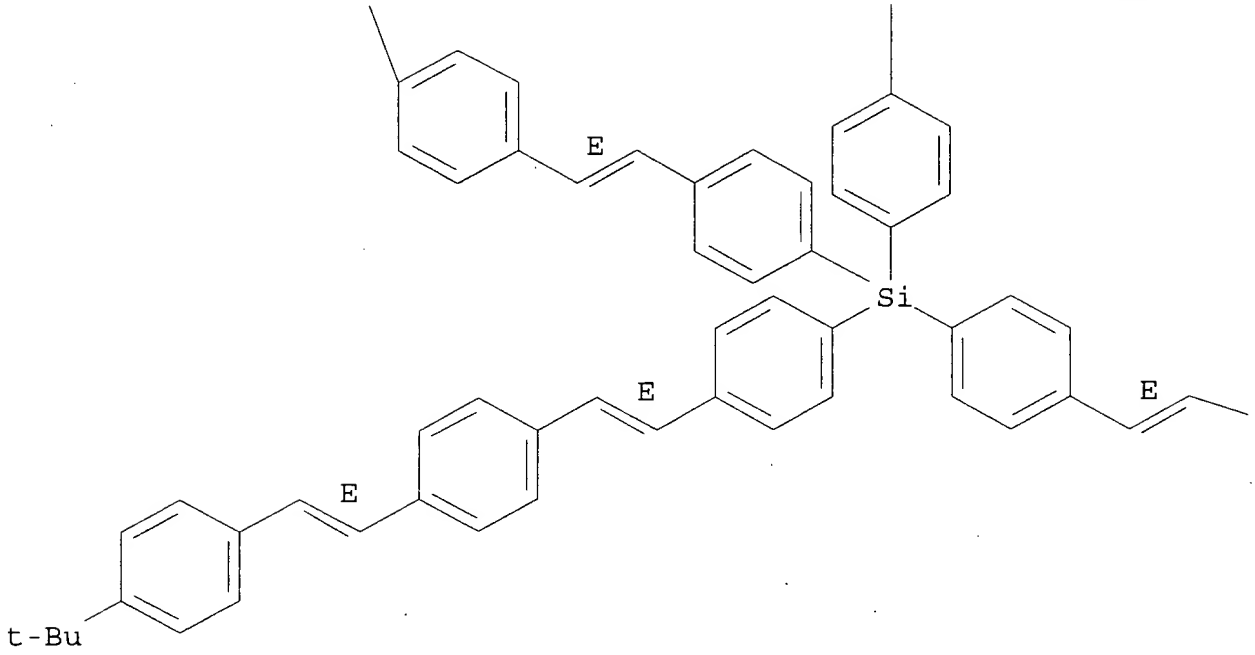

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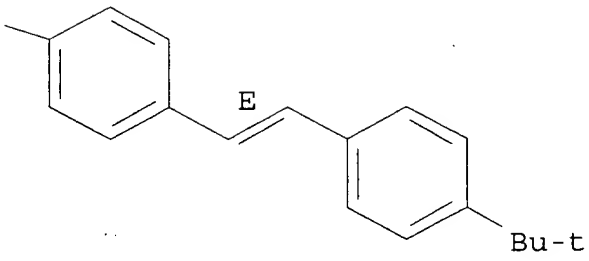
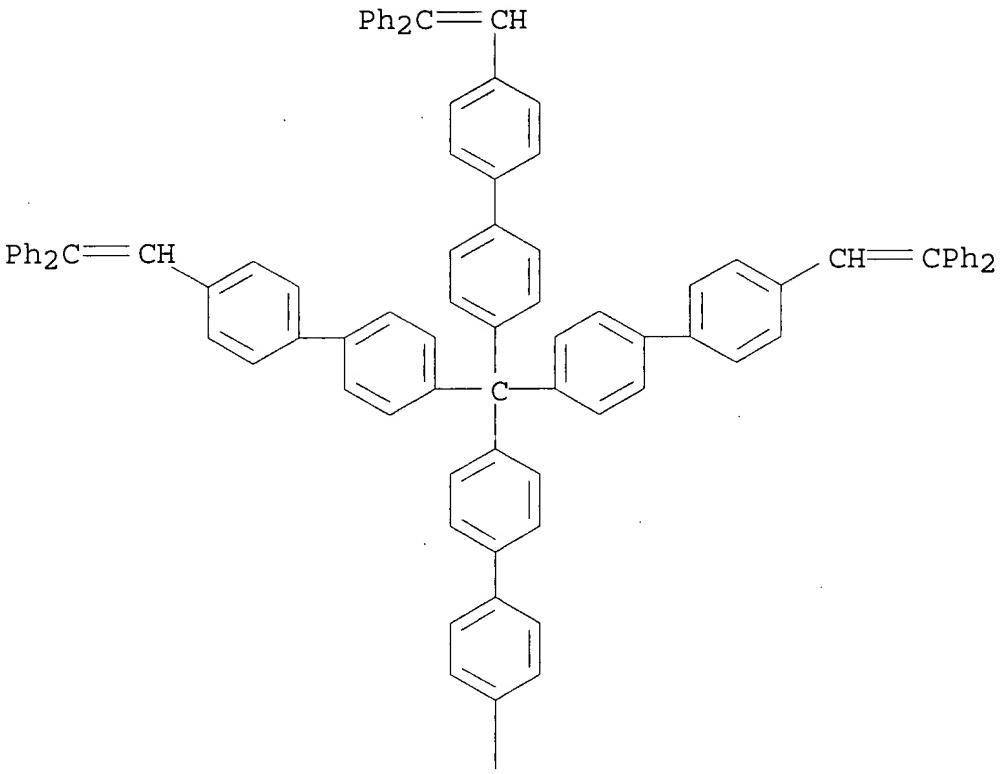


RN 288105-05-5 HCAPLUS

CN 1,1'-Biphenyl, 4,4'',4''',4''''',4'''''''-methanetetrayltetrakis[4'-(2,2-diphenylethenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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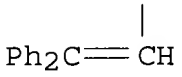
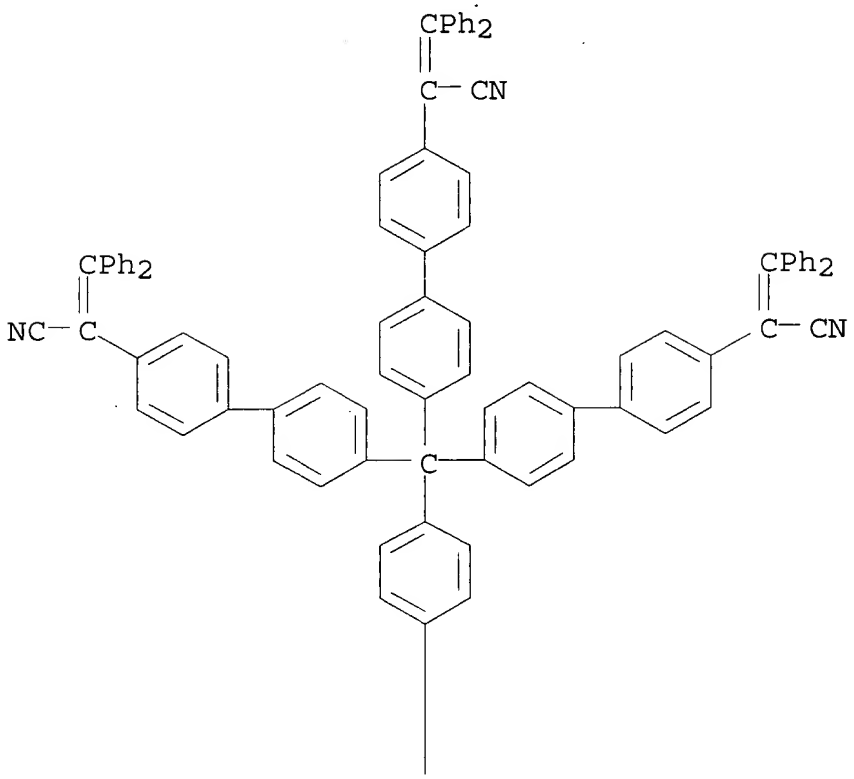


RN 288105-08-8 HCAPLUS
CN [1,1'-Biphenyl]-4-acetonitrile, 4',4''',4''''',4'''''''-methanetetrayltetrakis[.alpha.-(diphenylmethylene)- (9CI) (CA INDEX NAME)

PAGE 1-A



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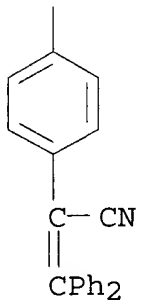
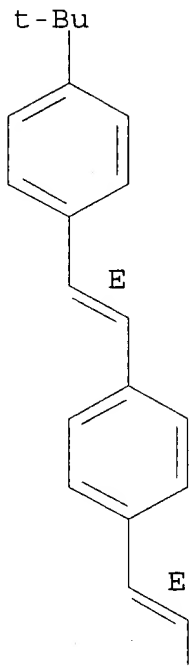


RN 288105-10-2 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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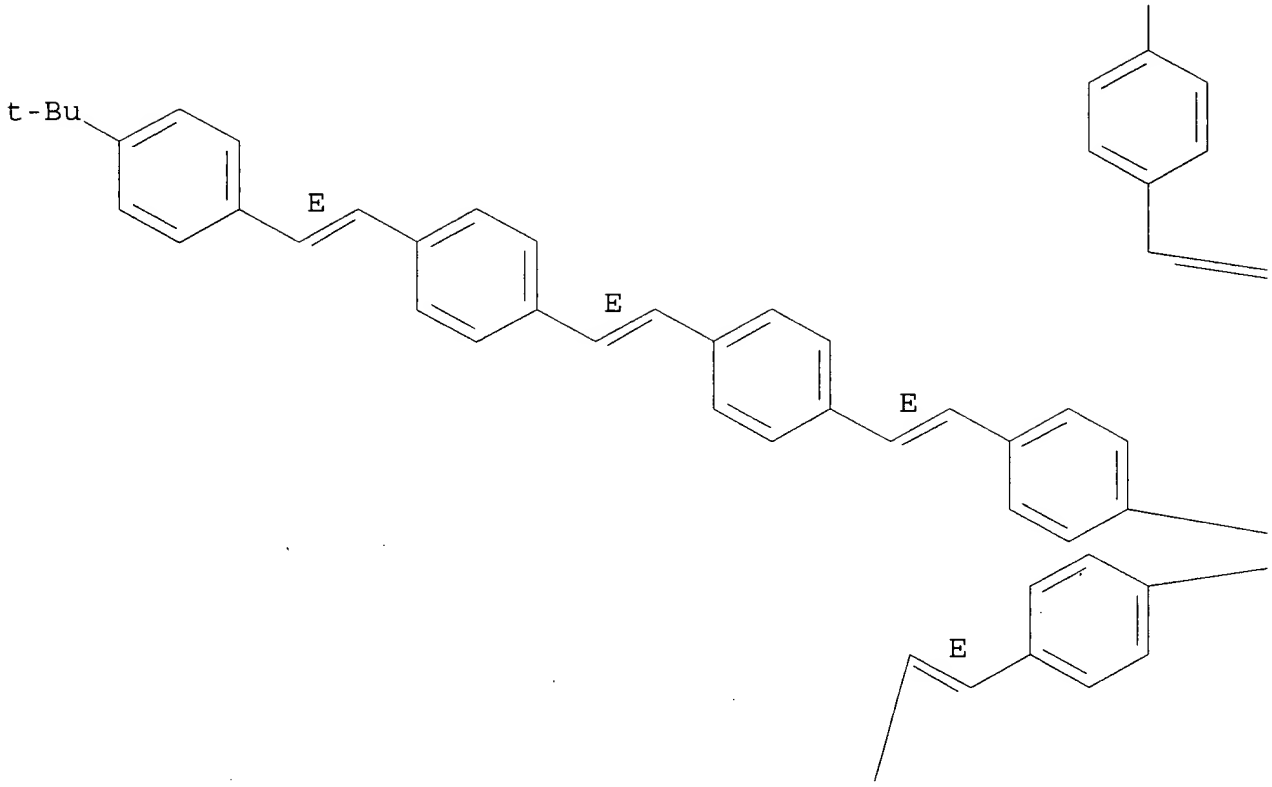

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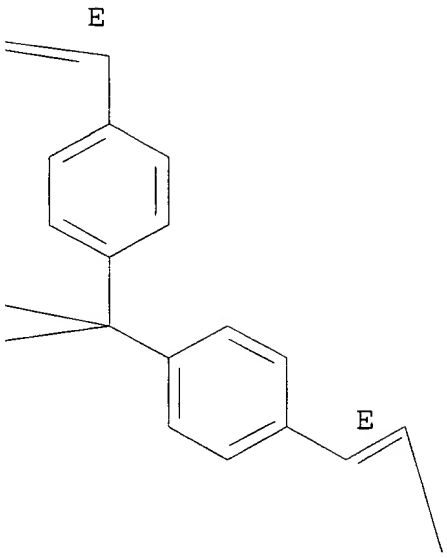

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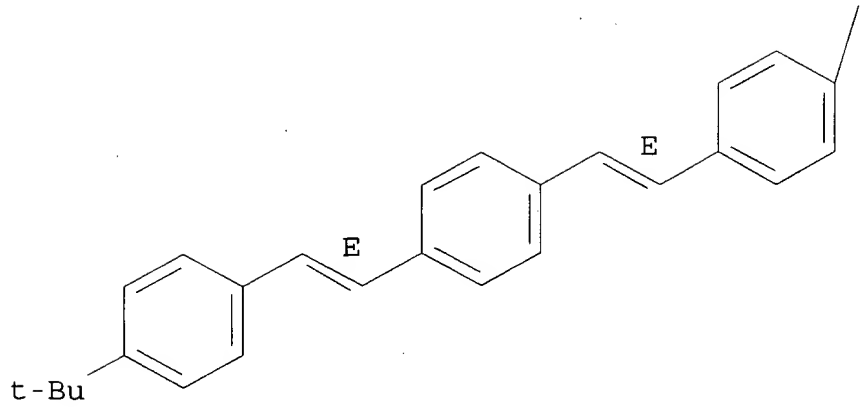

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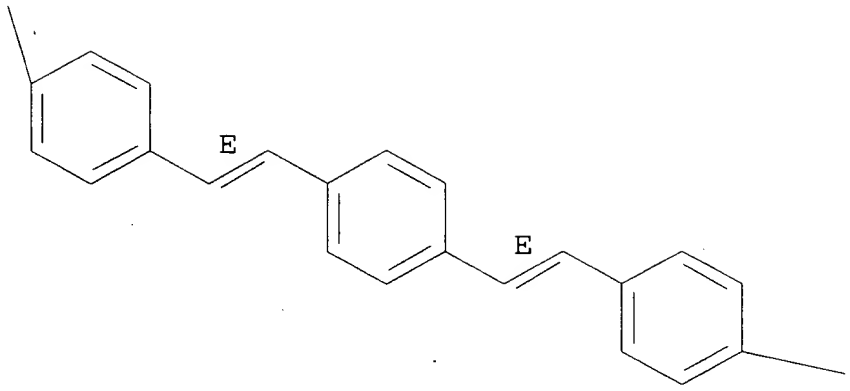

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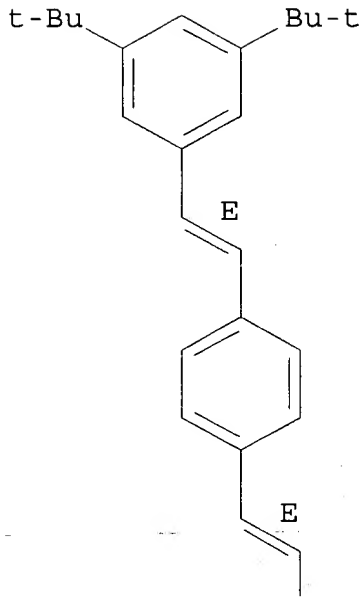
Bu-t

RN 288105-12-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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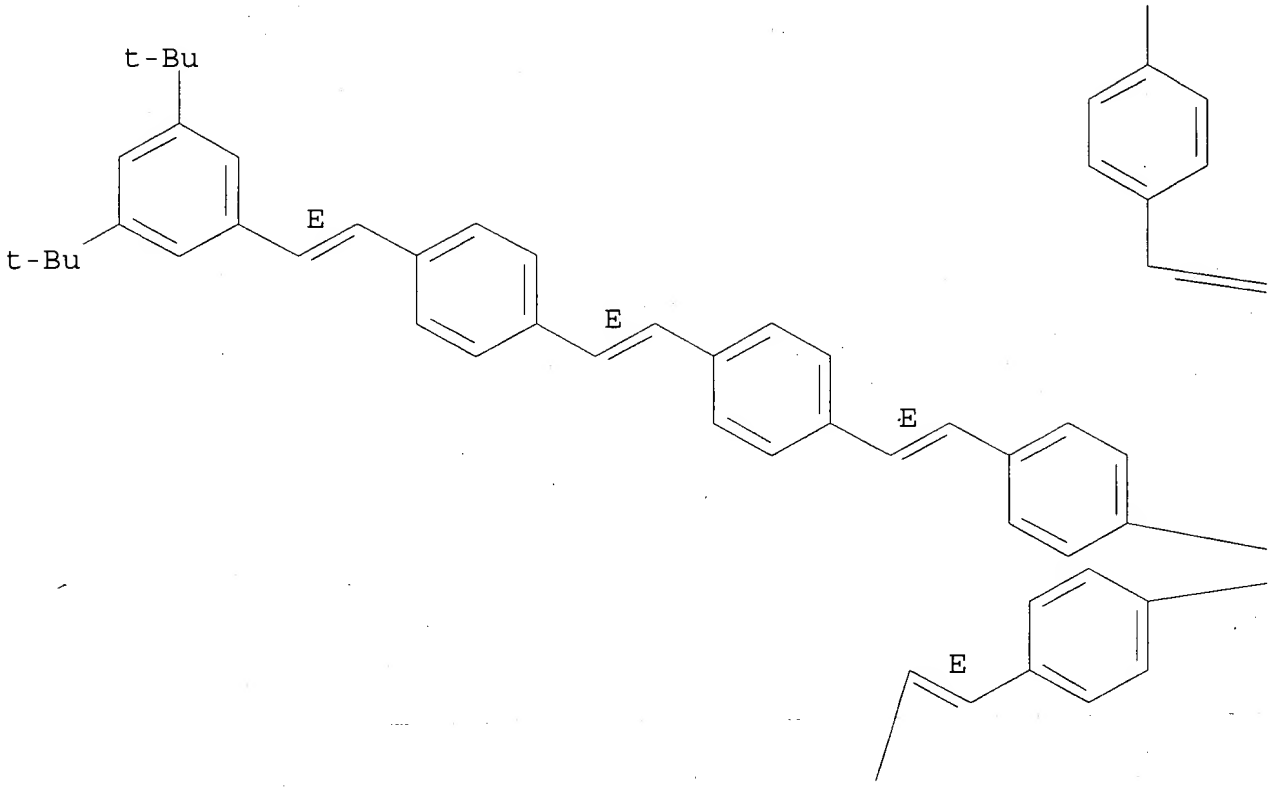

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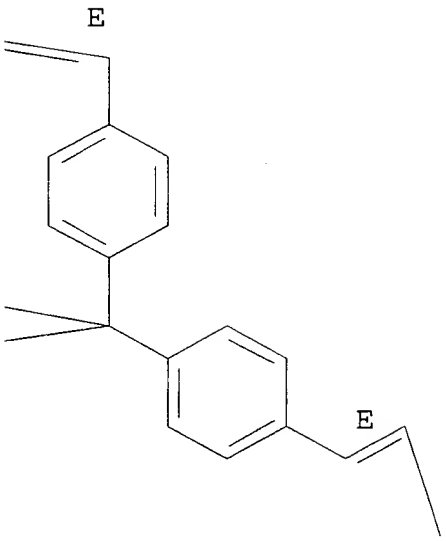

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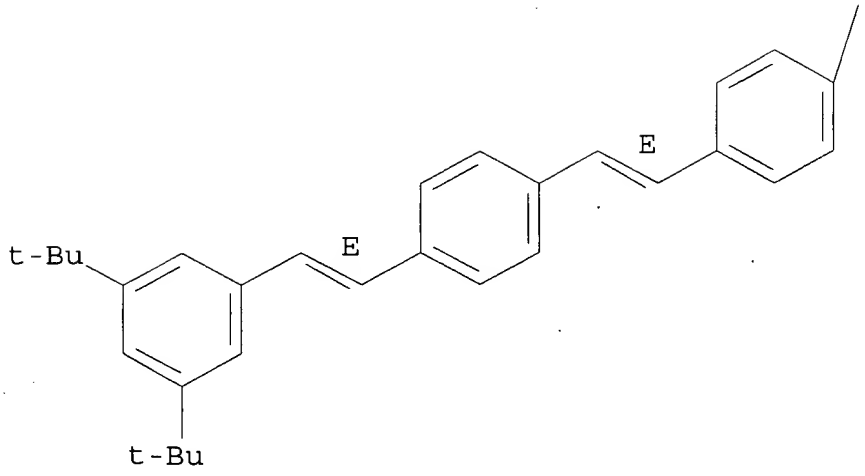

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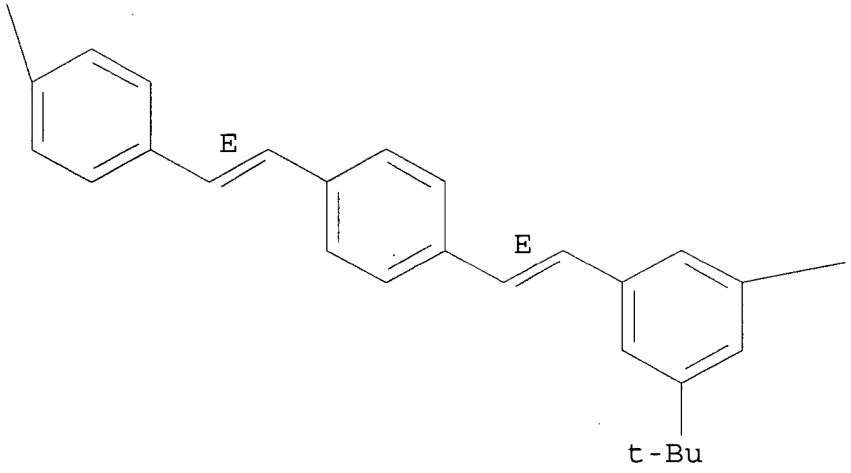

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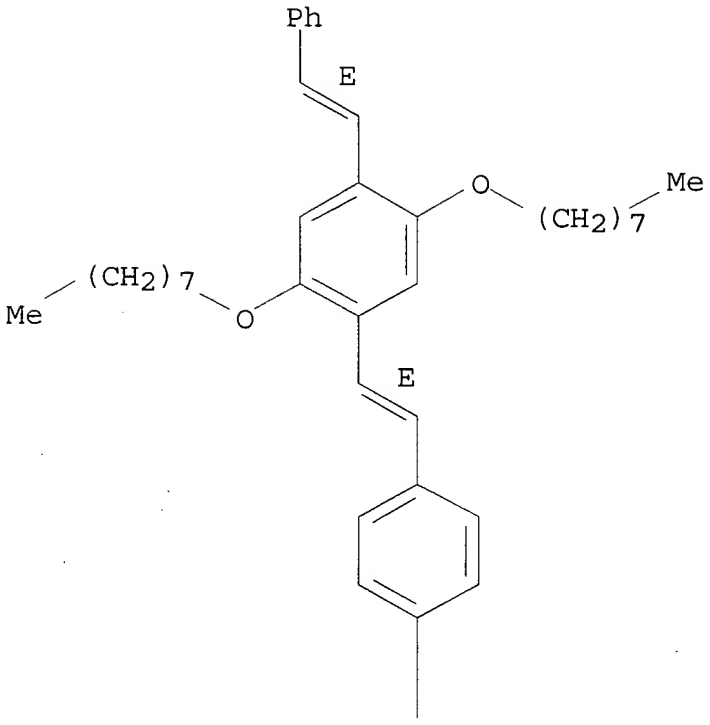
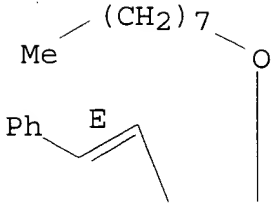
—Bu-t

RN 288105-15-7 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[2,5-bis(octyloxy)-4-[(1E)-2-phenylethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A





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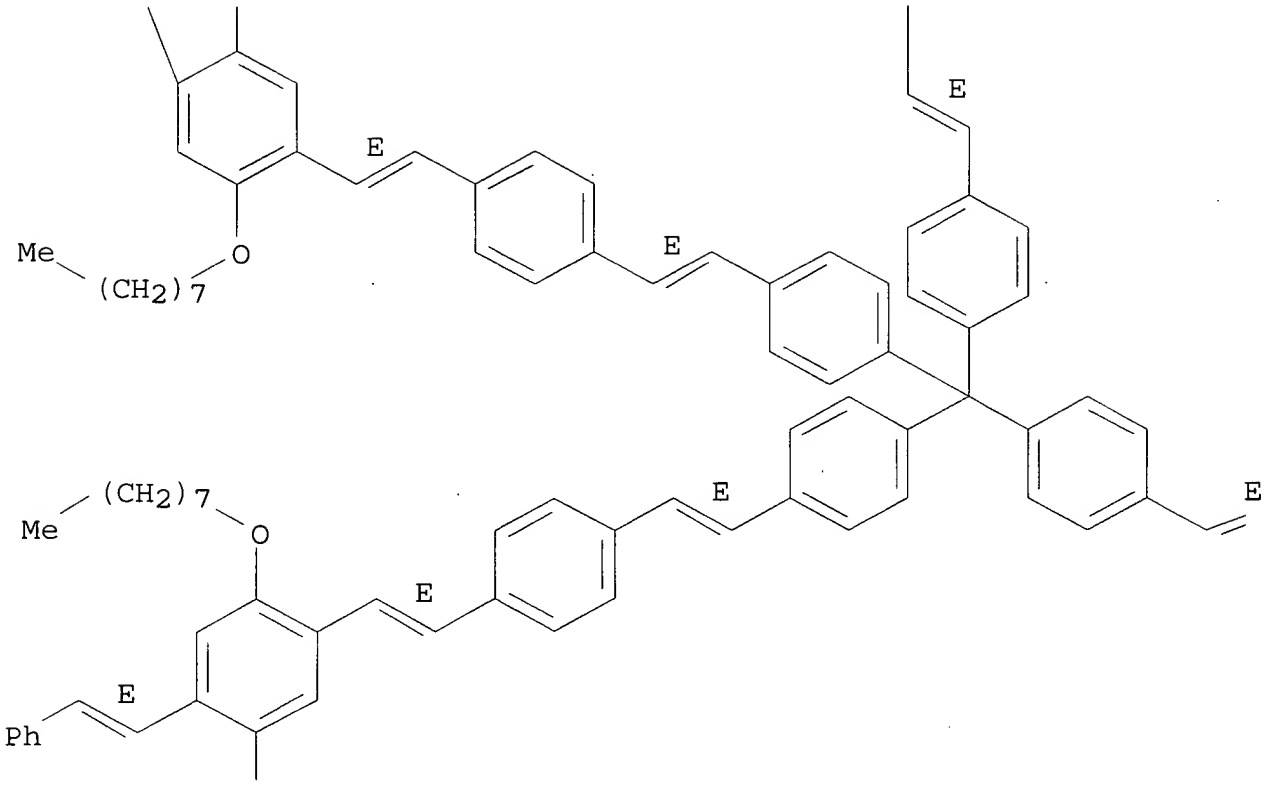

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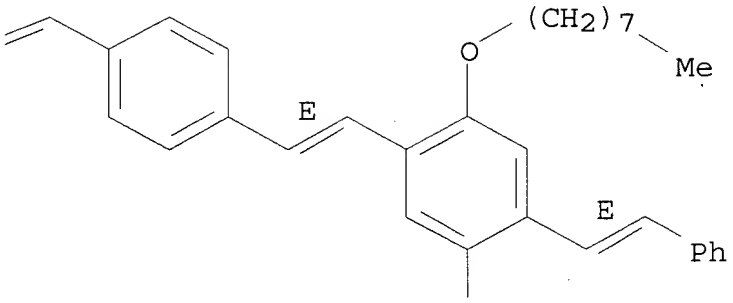

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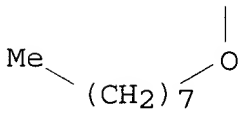

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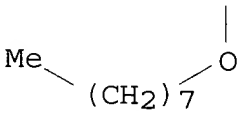

IT **288104-98-3P 288104-99-4P 288105-00-0P**
288105-01-1P 288105-05-5P 288105-08-8P
288105-10-2P 288105-12-4P 288105-15-7P
(prepn., morphol., and optical properties of tetrahedral oligo(phenylenevinylene) materials)